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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/799,475	03/11/2004	Hajime Hamada	FUSA 18.128B	8382

26304 7590 05/31/2005

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EXAMINER
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ISSING, GREGORY C

ART UNIT	PAPER NUMBER
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3662

DATE MAILED: 05/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/799,475

Applicant(s)

HAMADA ET AL.

Examiner

Gregory C. Issing

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 March 2005.  
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 12,13,18 and 19 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 12,13,18 and 19 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☐ All b) ☐ Some \* c) ☐ None of:  
 1. ☐ Certified copies of the priority documents have been received.  
 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date 26040723  
 4) ☐ Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_  
 5) ☐ Notice of Informal Patent Application (PTO-152)  
 6) ☐ Other: \_\_\_\_\_

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1. The terminal disclaimer filed on 3/21/05 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US patent 6,577,273 has been reviewed and is accepted. The terminal disclaimer has been recorded.

2. The amendment is not clearly provided with respect to claim 12, line 4, wherein the comma appears is to be deleted. The comma should be double-bracketed to indicate cancellation since the comma is not shown with a line drawn through it.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 12, 13, 18 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 12, it is unclear how a radio receiver, which is remote from the base station measures a direction "as seen by the base station" as set forth in the preamble. Applicants have neither amended nor responded to the rejection. It is unclear if the direction is measured by/at the base station using phase difference information received at the receiver and somehow provided back to the base station, or if the receiver is measuring the direction.

In claim 12, line 11, the language "as an angle which the vertical direction serving as a reference forms with a direction of a straight line connecting said antennas" fails to clearly and distinctly set forth the invention. Further, the language "the vertical direction" neither has an antecedent basis nor does it provide a definite limitation since no physical relationship has been defined. Again, the claim is indefinite since it is unclear whether the direction calculation is being made at the receiver or the base station since it is unclear how the receiver can determine the direction since the reference information is related to the base station.

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The scope of the preamble of claim 18 is not commensurate in scope with the body of the claim. The preamble sets forth a radio receiver for measuring distance, yet the body of the claim sets forth first and second signals transmitted by antennas disposed remotely from the receiver at a base station. If the claim is directed to the receiver, the structural specifics of the transmission are not commensurate in scope therewith. Since the claim is directed to a receiver, the limitations of antenna dispositions at the transmitter are not further limiting. In line 5, the language "a phase different calculation" should be "a phase-difference calculation." The language "as an angle which the vertical direction serving as a reference forms with a direction of a straight line connecting said antennas" fails to clearly and distinctly set forth the invention. The language "the vertical direction" neither has an antecedent basis nor does it provide a definite limitation since the no physical relationship has been defined. Again, the claim is indefinite since it is unclear whether the direction calculation is being made at the receiver or the base station since it is unclear how the receiver can determine the direction since the reference information is related to the base station; since the claim is directed to the receiver, it appears as though the direction calculation is made thereat, however, the claim fails to make clear how the receiver is aware of the structural characteristics of the transmitting base station.

5. Notes regarding Gilhousen in view of Ichihara et al

6. Applicants argue that the combination of references fail to teach many of the limitations.

Since the claims only set forth a receiver for receiving and demodulating orthogonally spread signals from plural antennas of a base station, the calculation of a phase difference therebetween and a determination of direction therefrom, it is unclear how "many of the limitations" are not shown, specifically since Gilhousen is directed to a base station having plural antennas separated by respective known distances, each of which transmits a signal with a preassigned Walsh code, which are orthogonal codes, and a mobile station which includes a receiver for receiving and demodulating the transmitted codes, and subsequently determining time differences therebetween for use in

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determining position relative to the base station; position relative to the base station inherently includes direction. Alternatively, Gilhousen suggests operation within a time division multiple access TDMA system (col. 8, par. 3) rather than a CDMA, thereby teaching the time sharing antennas. Applicants argue that Gilhousen uses hyperbolic lines of position calculated from time differences while Ichihara et al allegedly only teach the use of a phase shifter to cancel phase differences. Applicants' arguments are moot in light of the new grounds of rejection set forth below. The rejection of Gilhousen in view of Ichihara et al is withdrawn in favor of the following rejection.

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 18 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Ewen (3,946,385).

Ewen discloses an interferometric navigation and guidance system including a receiver (Figure 3) for receiving first ( $f_{c1}$  &  $f_{c1} + f_m$ ) and second ( $f_{c2}$  &  $f_{c2} + f_m$ ) signals from first (Ant. A) and second (Ant. B) antennas of a base station (Fig. 2) the antenna space by distance  $d$ , a phase detector (42) for calculating a phase difference between the first and second signals, and means for determining the direction from the calculated phase difference. A sequential mode of operation is also disclosed wherein the first and second antennas operate in a time shared mode (col. 9). Multipath is present in every transmission system and it is well-known that the earliest (first) arriving signals represent the line of sight path.

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9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ewen in view of Gilhausen.

Ewen teaches the use of separate carrier frequencies for the purpose of identification as opposed to the claimed orthogonal spreading codes. Gilhausen teaches the conventionality of orthogonal spreading codes for the purpose of providing identification of transmission site. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Ewen by substituting orthogonal spreading codes as the means to differentiate the signals transmitted from the first and second antennas respectively in view of Gilhausen and furthermore in view of the teachings of Ewen to utilize a coded sequence format to insure knowledge at the receiver concerning the order in which the antennas are involved in the transmitting sequence.

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Earp, deceased et al (4,385,299) disclose an apparatus for transmitting bearing information including first and second antennas transmitting first and second respective signals such that a receiver is capable of receiving and demodulating the signals so as to determine the bearing between the receiver and the transmitting antennas.

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the

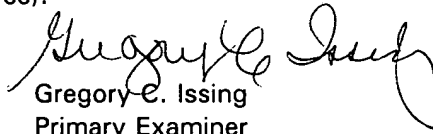
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mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory C. Issing whose telephone number is (571)-272-6973. The examiner can normally be reached on Monday - Thursday 6:00 AM- 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Tarcza can be reached on (571)-272-6979. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Gregory C. Issing  
Primary Examiner  
Art Unit 3662

gci